

been prevented. Such a work shows a very wise and far-sighted policy, and undertaken, as it has been, in the true scientific spirit, it has satisfied not only those immediately benefited, but entomologists as well. It is the densest stupidity which refuses the expenditure of hundreds to save thousands, or which looks for immediate practical results from the first appropriation. "Learn to labor and to wait" is not a part of the average legislator's policy, to whose mind results must be immediate or they are nothing. Now in the midst of all this good work that is being done by the department, and that has been so wisely provided for, why is it not seen that another great work is waiting to be done, a work that can not be entered upon too quickly? Noxious insects are not the only destroyers of crops, but hosts of injurious parasitic plants are spreading everywhere. We venture to say that loss from this source is as great as from insects. The habits of these injurious parasites have not been studied much in this country, but there are competent men who are working at them in a private way, but this is slow business when the country is in need. The rusts and smuts, and molds and rots, all need studying, and there could be no wiser appropriation of public money than to organize a commission for such investigation on the same basis as the Entomological Commission. The Department of Agriculture should make the move in this matter, and urge upon the next Congress the necessities of the case, backed by all the scientific and agricultural journals of the country. A laboratory for such investigations can be fitted up with very little outlay, and with unlimited opportunity for observing these parasites over large areas the results would undoubtedly be most satisfactory. There is some way of getting rid of these pests, and it can only be found by a careful study of their life histories. Usually they pass through different phases upon different hosts, and these hosts may sometimes be necessary to their further development. If then some host plant, which may be of no economic value, is acting as a carrier of these destructive parasites to some valuable crop, what incalculable importance it would be to know it! This is but the vaguest kind of intimation as to the direction in which practical results might speedily be reached. A commission for the study of injurious parasitic plants should now be the ambition not only of the Department of Agriculture, but of every botanist and agriculturist in the country.—J. M. C.

EDITORIAL NOTES.

PROFESSOR COULTER gave an account of the development of the dandelion flower before the A. A. A. S. at Minneapolis. His conclusions were: I. The inferior ovary is produced by an arrest in the development of the floral axis, the rising in a peripheral ring of the floral organs, and the gradual arching over of the cavity thus produced by the carpellary leaves; II. The syngeneisous anthers are united by contact and pressure, but in no sense structurally; III. The ovule is not produced directly from the axis, but is an outgrowth from the surface (probably the mid rib) of a carpellary leaf. The paper opened up a number of incidental questions of much interest. It will appear shortly in the *American Naturalist*.

PERONOSPORA VITICOLA was found on *Ampelopsis* at Minneapolis by Dr. Farlow. The discovery is an important one in view of the strenuous efforts of European countries to prevent the spread of the disease. Our native *Ampelopsis* is almost as common in many cities of Europe as in this country, and specially observable in Geneva.

DR. J. D. TRASK, of Astoria, N. Y., has published an account of the poisoning of thirteen persons, belonging to several families, five of whom died, from eating unwholesome mushrooms. He is of the opinion (which to us does not seem likely) that many deaths occur annually from this cause. The trouble appears to come from confounding two poisonous white-gilled species of mushrooms, *Amanita phalloides* and *A. verna*, especially the former, with edible kinds. While a few poisonous species are to be avoided, there are, on the other hand, many kinds that may be eaten with impunity, and of these the most desirable—*Agaricus campestris*, the common mushroom with pink gills, *A. procerus*, one of the largest species of the genus, *Morchella esculenta*, the morell, and *Lycoperdon giganteum*, the great puff-ball—are so characteristic in appearance as to offer small opportunity for mistakes, and that only to the most careless observers.

A PAPER, by E. W. Clappole, on the occurrence of *Vaccinium brachycerum* in Pennsylvania, read before the Minneapolis A. A. S., will soon appear in the proceedings of the American Philosophical Society.

PROFESSOR HARVEY, of the Arkansas Industrial University, has distributed an excellent paper on the Forest Trees of Arkansas, reprinted from the *American Journal of Forestry*. It is a very full account of the arboreal flora, giving distribution and many notes of interest.

M. VESQUE claims that the histological characters of plants can be used for their systematic classification. It may be that the systematic classification of plants can be made more easily than the systematic classification of their tissues, but that there is endless confusion about the latter, every student of histology knows. Vesque depends on such structures as stomata, hairs, the fibrovascular bundles, etc., and really shows that many natural groups can be made upon the basis of such characters.

THE TABLE OF CONTENTS and index for the first volume of *Science* are models of completeness and convenience.

IT SEEMS that atmospheric pressure must be counted as one influence on the growth of plants. Wieler, at Tübingen, has been experimenting, and finds that diminished atmospheric pressure induces more rapid growth, of course within certain limits. As Dr. Goodale remarks in *Science*, such investigations "may compel us to revise some notions now held in regard to the adaptation of plants to their surroundings in past ages, and at the present time upon high mountains."

PROF. WITTRÖCK has just published, in Stockholm, a "Snow and Ice Flora," which is included in Baron Nordenskjöld's studies in the extreme north, but is an exhaustive account of our knowledge of the subject. Forty-seven species are described, thirty-seven of which belong to the snow and ten to the ice. They

are almost entirely alge of microscopic size and very low organization, mostly unicellular. The most prominent and most abundant of the plants is the famous "red snow," *Sphærella nivalis*, and next to it, and the only plant limited entirely to the ice flora, is a new species discovered by Nordenskjöld and Berggren and named *Ancylonema Nordenskjöldii*. This latter plant occurs in such abundance that it gives the ground a purple-brown color, and Baron Nordenskjöld thinks it has much to do with the melting of the ice.

IT NOW APPEARS that even the spermogonia of *Uredinææ* attract insects by a sweet secretion, and that doubtless the spermatia are carried away by them.

THE BULLETIN of the Buffalo Naturalists' Field Club continues in its fourth number a goodly number of interesting botanical notes, chiefly by David F. Day, Esq.

THE FIRST ANNUAL REPORT of the Ohio Agricultural Experiment Station is before us, and is full of matter interesting to botanists. The director, Prof. W. R. Lazenby, does his work in such a scientific spirit that we expect not only agriculture, but physiological botany to share in the results.

IN THE TWELFTH ANNUAL REPORT of the State Geologist for Indiana, just published, is a catalogue of the plants of the central-eastern part of the state, prepared by Dr. A. J. Phinney, of Muncie. The list is interesting in many respects, not the least of which is that it comes from the highest ground in the state and a region little visited by botanists.

WE ARE SURPRISED to learn, through a letter from De Bary to Dr. Farrow, that Dr. Engelmann is quite ill at Strassburg. He sailed from this country late in June.

TOO LATE FOR OUR last issue we learned that Poulson's *Botanische Mikrochemie* is being translated by Mr. Wm. Trelease, and what we "hoped" in the review was already being accomplished. We understand that Cassino is to publish it, and with a full realization that it is to be used in the laboratory. We bespeak for it a hearty reception into the botanical laboratories of this country.

A GREAT WORK is being done for botanists at the N. Y. Agricultural Experiment Station, under the direction of Dr. E. L. Sturtevant. A command of money and a most suggestive mind have made possible series of experiments upon a more extensive scale than ever attempted in this country before. Dr. Sturtevant, while keeping agriculture in the foreground, is quietly laying up an immense store of material for the philosophical botanist. He is bringing to bear upon plants every possible influence that can be made to affect their growth, and really he is seeing incipient species springing up under his own manipulation and can recognize the forces that are effecting the change. Many other experimenters in agriculture are seeing the same results, but very few have the acuteness to discern the causes. This work has but begun, but we look for it to become a source of unlimited material not only for the agriculturist but for the professional botanist. Already has Dr. Sturtevant intimated certain results which will completely overturn and tear up by the roots some of our preconceived notions, and one of these days we may look for something startling.